ROYAL ASTRONOMICAL SOCIETY.

VOL. VI. *February* 9, 1844. No. 4.

Report of the Council of the Society to the Twenty-fourth Annual General Meeting, held this day.

THE annual return of the General Meeting of the Society affords the Council the usual opportunity of congratulating the Fellows not only on the favourable position of our own Institution, but also on the increasing advancement of the science of Astronomy in general. New works have been published, and others are now in progress, that must tend to promote our favourite study; and instruments have been formed of an entirely new construction, and others are still being constructed, which in due time will be brought to bear upon many important points of our system, and thus lead to the improvement of practical and theoretical astronomy.

The Report of the Auditors, which is subjoined, will shew the state of the finances of the Society:

RECEIPTS.

	£.	s.	d.
Balance of last year's account	261	11	4
1 year's dividend on £900 Consols	26	4	4
1 year's ditto on £2061 13s. 4*d*. New 3½ per Cents	70	1	2
On account of arrears of contributions	65	2	0
62 annual contributions (1843–44)	130	4	0
2 ditto (1844–45)	4	4	0
6 compositions	126	0	0
4 admission fees	8	8	0
1 first year's contribution	2	2	0
Sale of Memoirs, by Mr. Hartnup, from Jan. 27, to Nov. 9, 1843	125	11	0
Ditto by Mr. Harris, from Nov. 9, 1843, to Jan. 22, 1844	5	12	6
	£825	0	4

EXPENDITURE.

Purchase of £123 4s. New 3½ per Cents	126	0	0
Moyes and Barclay, for printing Memoirs, Vol. XIV.	298	1	7
Ditto, for printing Monthly Notices, &c. for Session 1842-43	38	19	6
W. Rumfitt, for bookbinding, &c.	11	0	9
Carried over	£474	1	10

EXPENDITURE (*continued*).

	£.	s.	d.
Brought forward	474	1	10
W. Wyon, for 3 Gold Medals and cases	35	0	6
J. Hartnup, 11 months' salary as assistant-secretary, from Dec. 9, 1842, to Nov. 9, 1843	73	6	8
R. Harris, 2 months' salary as assistant-secretary, from Nov. 9, 1843, to Jan. 9, 1844	13	6	8
J. Hartnup, for commission on collecting £309 1s.	15	9	0
R. Harris, for commission on collecting £32 18s. 6d.	1	12	11
Charges on books, and carriage of parcels	2	18	4
Postage of letters	17	8	0
Porter's and charwoman's work, &c.	8	7	6
Tea, sugar, cakes, &c. for the evening meetings	13	13	0
Coals, candles, &c.	12	13	6
Sundry disbursements by the Treasurer	13	3	3
Taxes: Income tax 1 9 2; Poor's rate 4 17 9; Church rate 0 17 0; Land tax 3 2 6; Window duty 5 4 9	15	11	2
Balance in the hands of the Treasurer (Jan. 22, 1844)	128	8	0
	£825	0	4

The assets and present property of the Society are as follow:

				£.	s.	d.
Balance in the hands of the Treasurer				128	8	0
3	contributions of 5 years' standing		£31 10 0			
5	—— of 4	ditto	42 0 0			
7	—— of 3	ditto	44 2 0			
16	—— of 2	ditto	67 4 0			
36	—— of 1	ditto	75 12 0			
				260	8	0

£900 3 per Cent Consols.
£2123 7*s.* 1*d.* New $3\frac{1}{2}$ per Cent Annuities.
2 Gold Medals unappropriated.
Unsold Memoirs of the Society.
Various astronomical instruments, books, prints, &c.

But, besides this property, there is another sum invested in the public funds, which is called "The Lee Fund," out of respect to the original donor, Dr. Lee, who in the year 1834 invested 100*l.* sterling in the 3 per Cent Reduced Annuities in the name of this Society, with a request that the interest might be given, by the Council, to the widow or orphan of any deceased Fellow or Associate of the Society who might stand in need of it. The amount of stock purchased was 109*l.* 8*s.* 9*d.*; and the dividends have on several occasions been bestowed on parties by whom it has been most thankfully received. As the Society are only Trustees for this sum, the dividends have not been brought into the annual account, but are appropriated from time to time, as circumstances arise, without any exposure of the names of the parties who may solicit the relief. The last appropriation has been recently made, so that there is, at present, no accumulation of dividend.

The progress and present state of the Society, with respect to the number of its Fellows and Associates, may be best seen from the following abstract, continued from the Report of last year, viz.:

	Compounders.	Annual Contributors.	Non-residents.	Patroness, and Honorary.	Total Fellows.	Associates.	Grand Total.
February 1843	94	127	78	6	305	36	341
Since elected	3	1	...	...	4	...	4
Deceased.....	...	−2	−1	−1	−4	−3	−7
Resigned.....	...	−1	...	...	−1	...	−1
Removals	+3	−3	...	...	...	...	...
February 1844	100	122	77	5	304	33	337

With respect to the instruments of the Society, it may be proper to place on record the present state of them, viz.:

The *Harrison* clock,
The *Owen* portable circle,
The *Owen* quadruple portable sextant,
The *Beaufoy* circle,
The *Beaufoy* transit,
The *Beaufoy* clock,
The *Herschelian* 7-feet reflector,
The *Greig* universal instrument,

are in the apartments of the Society.

The brass quadrant, said to be *Lacaille's*,

is in the apartments of the Royal Society, for safe custody.

The Standard Scale

is under the care of the Astronomer Royal, and with the consent of the Council, is in actual use for the formation of a new standard measure, under the direction of the Standard Commission.

The *Cavendish* apparatus

at present remains in the possession of Mr. Baily.

The remainder of the instruments are lent, during the pleasure of the Society, to the several parties undermentioned, viz.:

The *Fuller* theodolite, to the Lords of the Admiralty,
The other *Beaufoy* clock, } to the Royal Society.
The two invariable pendulums, }
The *Lee* circle, to Lord Wrottesley.
The *Wollaston* telescope, to Professor Schumacher.

The Council always regret when they have cause to announce the decease of any of the Fellows or Associates of the Society. On the present occasion they have to lament the death of seven of their number: namely, His Royal Highness the Duke of Sussex,

Professor Wallace, Mr. William Allen, and Mr. Arnold, on the home list; and Messrs. Bouvard, Cacciatore and Hassler, amongst the associates.

His Royal Highness Augustus Frederick, Duke of Sussex, K.G. &c. departed this life on the 22d of last April, in his seventy-first year. He was the sixth son of George III. and early devoted his mind to intellectual culture, passing a more than respectable career in the University of Gottingen. Hence his learning and accomplishments were very considerable; and what might be deficient in profundity, was compensated by strong perceptive faculties. He was of independent opinions, and unwearied in his advocacy of civil and religious liberty. For nearly half a century he was the persevering and zealous patron of every really charitable institution, every useful scheme, and every benevolent project. When the late Mr. Davidson left our shores for the dangers of a journey to Timbuctoo, "Bring this gentleman safely home again," said the Duke to Abou Bekr, the Negro companion, "and you shall have an asylum in this palace for the rest of your life."

As President of the Society of Arts, he was remarkable for the suavity and appropriate addresses with which he distributed the adjudicated prizes; and his eight years' presidency of the Royal Society was conducted with such general satisfaction, that his resignation was received with unfeigned regret. His extensive acquaintance with scientific and literary men, native and foreign, manifested a decided natural taste for their pursuits, and a just appreciation of their value. In his intercourse with the Fellows, he was kind and attentive without ostentation, and affable without condescension.

Although his means were by no means commensurate with his high station, his Royal Highness collected a splendid library, rich in every department of science and learning, and unexcelled in its biblical department. He enjoyed, in a high degree, the respect and regard of the British public; and this feeling was shared even by those who differed most strongly from the views which guided his course in political affairs. His, however, were hardly to be called political leanings, for his liberal aspirations emanated from a truly benevolent heart, wishing to promote the physical comfort and mental improvement of his fellow-creatures.

The cause of humanity has also experienced another serious loss in the death of Mr. William Allen, a member of the Society of Friends, President of the Pharmaceutical Society, and one of the original Members of this Society. This gentleman was born on the 19th of August, 1776, in London, and soon entered upon the useful profession of Chemistry. In this branch of knowledge he made such advances as to be identified with its scientific progress; and he became a distinguished Professor of Experimental Philosophy at Guy's Hospital, and the Royal Institution of Great Britain. He was connected with some of the nicest experiments of the day, in conjunction with Davy, Babington, Marcet, Luke Howard, and Dalton. Together with Mr. Pepys, he made the well-known inves-

tigations upon atmospheric air, and other gasses, which are recorded in the Philosophical Transactions; and in which he proved the identity of the diamond with charcoal.

What, however, distinguished him here, was his taste for Astronomy, as evinced by his elegant private observations, and his extensive astronomical library. In 1815, he published a neat little work, intituled *A Companion to the Transit Instrument:* it contains all the stars, from the first to the fourth magnitudes, together with the places of some of the most interesting of the double-stars, and a few nebulæ.

Mr. Allen united, in a remarkable degree, sound knowledge, suavity of manners, and sterling principle; and he deservedly possessed the esteem of all who knew him. He pursued his views with persevering industry; and travelled far and near in his search after the means of advancing the moral and religious education of the poor. He died on the 30th of last December, at Lindfield in Sussex, a scene of his zealous benevolence; for it was here that he endeavoured to shew how much aid might be afforded to the work of education, by the earnings of the scholars: and, with co-operation, he founded a colony of labourers in that neighbourhood, to whom he allotted land at a remunerating but easy rent, in order to improve their moral and physical condition.

Such was William Allen, whose life was devoted to the best interests of mankind, and whose name is known wherever the efforts of humanity are in activity.

Professor Niccolò Cacciatore was born at Castel-termine in the southern part of Sicily, of respectable parentage, on the 26th of January, 1770. In his boyhood he was educated by his paternal uncle, a Professor of Theology in Girgenti. At the age of 17 years he went to Palermo, and, under the care of the Canon De Cosmis, his townsman, he devoted himself to the study of Greek and the belles lettres. He then proceeded to study mathematics and the physical sciences without the assistance of a master. Piazzi became acquainted with him in the house of De Cosmis, and, surprised at his progress, took him to the Observatory to perfect him in his favourite study, and has made favourable mention of him in the preface to the Palermo Catalogue. In September 1798, he went to reside entirely with Piazzi, and there occupied himself exclusively with astronomy, so that, in 1800, he was appointed assistant at the Royal Observatory, and assisted in completing Piazzi's great Catalogue above-mentioned.

During the years 1803, 4, and 5, he repeated the observations on Maskelyne's 36 fundamental stars, which labour was published in the Sixth Book of the Royal Observatory of Palermo. On these results Piazzi wished to found a new catalogue, but suffered so much in his eyes in 1807, that he confided it to Cacciatore, and the work was published in 1814; on which he was honoured with Lalande's gold medal from the Royal Institute of France.

In 1810, he had been elected general examiner of the *Corpi Facoltativi* of Sicily, with the charge of instructing, in the higher

geodesy, the officers of the Topographical Office. In 1814, he was declared honorary professor in the Royal University. In 1817, Piazzi being called to Naples to direct the new Observatory there, Cacciatore was promoted to the direction of the Royal Observatory at Palermo. In 1819 accordingly, his observations and calculations of the fine comet of that year were published in his name.

But, in 1820, whilst he was assiduously prosecuting his researches on the proper motion of the stars, and on the thermometric cause of the observed difference of the obliquity of the ecliptic between summer and winter, the revolution occurred; when his house was pillaged, as well as the library of the Observatory, although in the Royal Palace; so that he lost every thing, even his manuscripts being partly carried off or destroyed. In trying to save the Observatory, he with difficulty saved his life, being with the greatest indignity thrust into prison. Yet in December of the same year he was deputed, as representative of Palermo, to the Parliament at Naples. He was elected an Associate of the Royal Astronomical Society of London, and was one of the 40 Associates of the Italian Society established in Modena. He was general secretary of the Academy of Sciences in Palermo, which he improved by introducing appropriate regulations.

In 1810 he married Emmanuela Martini, by whom he had five children. He had long felt a chronical affection of the brain, and finally suffered so much from the cholera that he was obliged to give up his astronomical labours, though he lingered until the 28th of January, 1841, when at two in the morning he expired in the arms of his wife and children. His son, Gaetano Cacciatore, is appointed his successor in the Observatory.*

The following is a list of his published works:

On the Comet of 1807.
On the Comet of 1819.
New Reflecting Circle of Simonoff, 1824.
Geognostic Observations on Monte Cuccio, 1824.
Geognostic Researches on Monte Cuccio, 1825.
Letter to Zach on Terrestrial Refractions, &c., 1825.
On Meteorology, 1825.
A Discourse on the Origin of the Solar System, 1826.
Letter to Visconti on some errors in Piazzi's Catalogue, 1827.
On the Barometric Rise in January 1828, in a Letter to Ferrusac.
Observations on Monte Cuccio, 1828.
Mineral Baths of Sclafani, 1828.
On Comparative Meteorology, in Latin, 1832.
Ditto, in Italian, 1832.
On the Summer Heat of Palermo, 1833.
On the Sirocco at Palermo, 1833.

* See further accounts of Niccolò Cacciatore in the *Annali Civili* of Sicily, No. 49, for January and February, 1841, page 72.

Difference of Longitude between Naples and Palermo, 1834.
On the Expected Return of Halley's Comet, 1835.
On Goniometry and Spherical Trigonometry, 1837.
On the Solar Spots, 1839.
Besides various articles in Periodicals and Scientific Correspondences.

William Wallace, LL.D., late Professor of Mathematics in the University of Edinburgh, was descended from a family in humble circumstances, which had been settled, for some generations, at the village of Kilconquhar in Fifeshire. His grandfather inherited a small property, the greater part of which he lost through injudicious management. His father established himself at Dysart, a sea-coast burgh in Fife, as a manufacturer of leather and shoes for exportation, and for some years carried on a considerable trade, which, however, was ruined by the breaking out of the American war. The subject of this memoir was born at Dysart on the 23d of September, 1768, and was the eldest of a numerous family.

In adverting to the circumstances of his early life, he used to relate that the first rudiments of his education were received from an aged widow in the town, who kept a school for children, and retailed small wares. About the age of seven, he was removed to a school of a better class, in which the principal branch of instruction was arithmetic. In this science, however, he had already been grounded by his father, and had made considerable proficiency in it before he was advanced to that department in the routine of his school progress. His attendance at school—for instruction it can scarcely be called—was discontinued when he had reached the age of ten or eleven years; and, according to his own statement, all he owed to the schoolmaster was the power of reading, and of forming, in a very indifferent way, characters by writing. His knowledge of arithmetic he owed to his father, and to his own strong liking for the subject.

In 1784, when in his sixteenth year, he was sent to Edinburgh to learn the trade of a bookbinder; and after a year or two of probation he entered upon a regular apprenticeship to this craft. But his passion for the acquisition of knowledge had been thoroughly roused by the perusal of some books which had fallen in his way; and, during the period of his apprenticeship, he devoted every spare moment to reading. These moments were, however, few. His master happened to be a person who had no sympathy with literary tastes, and no other concern about his apprentices than how to extract from them the greatest amount of labour. But his father, a man of considerable intelligence and strict religious principles, having removed with his family to Edinburgh, he had the comfort of residing, during this period, in the house of his parents, and the advantage of their society, encouragement, and moral superintendence, to which he professed himself to have been greatly indebted. His occupation, also, was in some respects favourable to the gratification of his tastes. Books of science

were constantly passing through his hands, and his curiosity could not be restrained from occasionally casting a glance at their contents. He had also acquired a few mathematical books of his own; and such were his ardour and enthusiasm in their study, that it was his constant practice to take his meals with one of them in his hand, and to carry one in his pocket, to read on his way to and from the workshop. By this assiduous application, before he reached the age of twenty, he had read and made himself master of Cunn's Euclid, Ronayne's Algebra, Wright's Trigonometry, Wilson's Navigation, Emerson's Fluxions, Robertson's Translation of La Hire's Conic Sections, and Keill's Astronomy. Of these books he cherished the remembrance, as the means by which he had been enabled to grope his way into the region of the mathematics.

Hitherto, Mr. Wallace's efforts to acquire knowledge had been made under the most disadvantageous circumstances; without sympathy from any one but his father, and without a companion or friend to appreciate his exertions or applaud his success. But he was now approaching the turning point of his fortunes. He happened to become acquainted with an elderly person, a carpenter by occupation, who was employed by the celebrated Dr. John Robison, the Professor of Natural Philosophy, as an assistant in his class experiments. This man, though a great reader of books, was no mathematician; but he had sat too near the feet of Gamaliel not to have imbibed a respect for the science, and for the pursuits of his young friend. With an excusable vanity, he was in the habit of boasting of his intimacy with the professor, to whom he proposed to introduce Mr. Wallace. The latter, however, with great good sense, declined the kindly meant offer until the term of his apprenticeship had expired, when, though still with some diffidence and hesitation, he was prevailed upon to take advantage of it. Armed with a letter from his humble patron, he waited upon the professor, who received him with great kindness, examined him with respect to his proficiency in geometry and the conic sections, and inquired into the circumstances of his life, and the means by which he had made so much progress in the mathematics. In the course of the conversation Dr. Robison considerately took occasion to warn him that the study of mathematics was not likely to lead to any thing advantageous in the world: the reply was, that he was aware of the fact; but being, as it seemed, doomed to a life of labour, he hoped to sweeten the cup by the pleasure to be derived from the possession of knowledge. The interview ended with an invitation from the Professor to attend the course of lectures on Natural Philosophy then about to begin. Sensible as he was of the advantages which he could not fail to derive from such instruction, it required no small sacrifice on his part to accept the offer; for, being then employed as a journeyman, the time thus occupied could only be commanded by the abstraction of an equal portion from his hours of rest or sleep. Every difficulty, however, gave way before a determined will. The class was diligently attended;

and he has been heard to say, that if he were asked which had been the happiest period of his existence, he would refer to that at which he attended the lectures on natural philosophy, when, for the first time in his life, he had the means of receiving sound instruction, and found himself in the company of young men devoted to the pursuit of knowledge.

Dr. Robison's next act of kindness was to introduce him to his colleague, Mr. Playfair, the Professor of Mathematics. Mr. Playfair was no less struck with the extent of his acquirements, and likewise offered him admission to the mathematical class. But attendance on two classes in one day being, in his circumstances, entirely out of the question, he was under the necessity of declining the offer, much, it may readily be believed, to his regret. Mr. Playfair, however, from this first interview, took a warm interest in his welfare, advised him with respect to the course of reading he should follow, supplied him with books from his own library, and continued his stedfast friend through life.

These details may appear trivial, or unnecessarily minute; but it can never be wholly uninteresting to trace the steps by which distinction in science or literature has been obtained when opposed by obstacles which might seem, and in ordinary cases prove to be, insurmountable. To the individual we are commemorating they were all-important: some may receive encouragement from his example; and science itself is placed in an advantageous light when we see men so eminent as Professors Robison and Playfair taking trouble with, and giving help and encouragement to, a friendless young man, who had no claim on their good offices, and no other recommendation to them, than his successful struggles in acquiring the elements of those sciences which they themselves cultivated with such distinguished success. On the other hand, the merit must have been of no ordinary kind which, to persons of their experience, appeared so remarkable.

About the time he was attending Dr. Robison's lectures he was induced, by the prospect of having the command of a greater portion of time than had yet been at his disposal, to exchange his occupation for that of warehouseman in a printing-office. While in this occupation Dr. Robison paid him a visit, and proposed to him to give private lessons in geometry to one of his pupils. This proposal opened up a new prospect to him, and admitted the first gleam of hope of his being able to emancipate himself from the drudgery of manual labour. He now also began to acquire a knowledge of Latin, and in this, as in the study of mathematics, his manner of turning time and opportunity to account may afford encouragement to those who are in pursuit of knowledge under difficulties. A part of his duty in the printing-office was to collect the successive sheets of a work from a series of heaps arranged round a circuit of tables. While engaged in this monotonous occupation, he fixed up upon the wall a Latin vocabulary, from which he committed to memory a certain number of words every time he passed it in making his round. In his study of Latin,

however, he received assistance from a student, to whom, in return, he gave instruction in mathematics.

After he had been engaged a few months in the printing-office, he entered into the employment of one of the principal booksellers of Edinburgh in the capacity of shopman. This change was advantageous in several respects. His circumstances were now considerably improved, and he found leisure, not only to pursue his favourite studies, but to increase his stock of knowledge by general reading, and even to give private lessons in mathematics in the evenings. While in this situation he contrived to get a few lessons in French, and commenced his acquaintance with the works of the Continental mathematicians.

In 1793, while in his twenty-fifth year, he took the resolution to give up his employment, and support himself by teaching mathematics privately. This plan probably succeeded to the full extent of his moderate expectations. He now attended a course of lectures by Professor Playfair ; and although, as the course was intended for an audience far behind him in mathematical acquirements, he had little to learn, the example of Playfair's manner—dignified, eloquent, and impressive, in a degree rarely equalled—was of great use to him in after-life. At the same time he also attended a course of chemistry, and by assiduous diligence endeavoured to repair, to the utmost of his power, the deficiencies of his early education.

In 1794, Mr. Wallace, on the recommendation of Professor Playfair, was appointed to the office of assistant teacher of mathematics in the academy at Perth. In respect of emolument the appointment was of no great value, but it gave him a settlement in life, with reasonable leisure to prosecute his mathematical studies, of which he did not fail to take advantage. In 1796, he presented his first memoir to the Royal Society of Edinburgh, entitled, "Some Geometrical Porisms, with Examples of their Application to the Solution of Problems." This paper, which contained some new and curious porismatic propositions, afforded ample proof of original and inventive powers; while his manner of conducting the investigation shewed how accurately he had imbibed the spirit and methods of the ancient geometrical analysis. About the same time, on the request of Dr. Robison, he contributed the article "Porism" to the third edition of the *Encyclopedia Britannica;* and, a few years later, when a new and greatly enlarged edition of that work was undertaken, he was enlisted as a regular contributor, and undertook to furnish the principal mathematical papers.

During the vacations of the Perth academy he paid regular visits to Edinburgh, where he continued to cultivate the friendship of Robison, Playfair, and other scientific men, to whom his now recognised talents and mathematical attainments procured him introductions. The first mark of literary distinction he received was that of Corresponding Member of the Edinburgh Academy of Physics; a society which, though not known by its published transactions, was at that time remarkable by reason of the cluster of talented persons of whom it was composed, several of whom have since

attained the highest distinction in literature, philosophy, and public affairs. Such association could not fail to have a powerful effect in the developement of his mind, even though his residence at a distance from Edinburgh prevented him from attending many of the meetings.

In 1802, he presented a second paper to the Royal Society of Edinburgh, containing a new method of expressing the coefficients of the developement of the algebraic formula which represents the disturbing effect of the mutual action of two planets on each other. This was a contribution of great merit, and, immediately upon its publication, established his reputation as a mathematician of the first order. The volume of the *Transactions* in which it appeared was reviewed in the second number of the *Edinburgh Review;* and an able analysis of Mr. Wallace's paper was concluded with the following encomium: "We cannot conclude without expressing our sincere admiration of this excellent performance—excellent in every respect; and, trifling as it may appear to mathematicians, remarkable for a pure, perspicuous, and not inelegant style. It is a paper, equal, in our opinion, to whatever has been most admired of the greatest analysts. We remember nothing in the works of Euler or Lagrange which belongs to a higher order of excellence in the science." Mr. Wallace's method of developement depended ultimately upon the proportions which the perimeters of two ellipses bear to those of their circumscribing circles; and in order to facilitate its application, he gave, in an appendix, a very beautiful and quickly converging series for the rectification of the ellipse, applicable to every case of eccentricity, and to every length of an arc that can possibly occur in calculation. His merit with respect to this paper cannot be considered as having been diminished by the discovery he made some time after its publication, that in certain respects he had been anticipated by Legendre. The very little intercourse which at that time existed between this country and France, and the position of the author in a remote provincial town, are sufficient excuses for his not having been more accurately acquainted with the state of mathematical discovery on the Continent.

Mr. Wallace had been for several years a contributor to some of the periodical publications in England in which mathematical questions were proposed, as *Leybourn's Repository*, the *Gentleman's Mathematical Companion*, and others of the same class. To this circumstance he attributed an incident which had an important influence on his future life. In 1803, he received a letter, under a feigned name, in which he was informed that an instructor in mathematics was wanted for the Royal Military College, then established at Great Marlow in Buckinghamshire, and recommended, if he thought of being a candidate for the office, to make an immediate application. Inquiry being made in the proper quarter, the information was found to be correct, but he ascertained also that it would be necessary to make his application in person. In matters affecting his own interests the disposition of his mind was not sanguine;

and, as in the present case he had no influence to employ, and no other recommendation to carry with him than his skill in mathematics, his chances of success appeared so small that he would have been deterred by the length and inconveniences of the journey from thinking more of the subject, had he not been encouraged by his friend Professor Playfair. On his arrival at the Military College he found there were several competitors; but the persons who had to decide on the respective qualifications of the candidates gave their decision in his favour, and he was accordingly appointed to the office.

Mr. Wallace held this appointment upwards of sixteen years, during which period, the whole of his leisure time was unremittingly devoted to scientific study and literary labour, the fruits of which appear chiefly in his numerous contributions to the two great Encyclopedias then publishing in Edinburgh. This species of writing, which is not particularly well adapted to form the basis of a permanent reputation, was in a manner forced upon him by the circumstances of his position. On his appointment to the Perth Academy he had married, and after he joined the Military College his family began to increase rapidly. The inconveniences he had suffered from the defects of his own early education rendered him only more solicitous that his children should not labour under any disadvantages in this respect, and, as they grew up, he placed them at schools in Edinburgh. His official income being insufficient for this expense, he was led to engage in the works now referred to, rather with a view to add to his means, and to enable him to discharge a sacred duty, than for the sake of any distinction he was likely to get by them. No individual, perhaps, was ever less influenced by considerations of a worldly nature, or more ready to bestow time and labour upon objects from which he could neither receive nor expect any remuneration whatever.

In 1808, he contributed a paper to the Royal Society of Edinburgh, entitled "New Series for the Quadrature of the Conic Sections, and the Computation of Logarithms," and containing some very remarkable formulæ for the rectification of circular arcs, with analogous expressions for the sectors of the equilateral hyperbola and the logarithms of numbers; all deduced from elementary principles, and without the use of the differential calculus or any equivalent method. At the time the paper was published, he believed the series to be entirely new, but he discovered afterwards that some of them had been previously given by Euler.

Mr. Wallace's services at the Military College were held in great estimation by the superior Officers, who frequently availed themselves of his practical sagacity in the adoption of regulations having respect not only to the course of instruction, but the general management of the establishment. One of the results of this deference to his recommendations (more particularly interesting to the Society), is the small observatory attached to the College, for the instruction of the officers of the senior department in practical astronomy. The plan of the building was originally furnished by

Dr. Robertson of Oxford; but the superintendence and arrangement of all the details of construction were confided to Mr. Wallace, who visited most of the Observatories in the neighbourhood of London, for the purpose of acquiring hints and information. A transit-instrument, an astronomical circle by Ramsden, a reflecting circle, and a clock by Hardy, were procured, and some other instruments were ordered, but countermanded from an apprehension of opposition to the estimates in the House of Commons. Although an Observatory of this kind cannot be expected to produce results of any direct advantage to astronomy in the present state of the science, it must still be regarded as no unimportant appendage to a national establishment for the instruction of Officers for the public service.

In 1819 a vacancy occurred in the Mathematical Chair of the University of Edinburgh, through the death of Professor Playfair, and the appointment of Mr. Leslie to succeed him in that of Natural Philosophy, and Mr. Wallace resolved on presenting himself as a candidate. The patronage belongs to the magistrates of the city, who, having in general no pretensions to be capable of estimating degrees of merit in abstract science, necessarily form their opinions from the testimony of others, or notions of general fitness, and are liable to be acted upon by influences of various kinds. In the present case a very keen contest took place; for another competitor (a man of general talent and great respectability, though unknown as a mathematician) was strenously supported by a strong political party. The struggle terminated, however, in his election by a large majority of the voters. This was the crowning object of his ambition. Ever since his appointment to the Perth Academy, he had fixed his regards on a professorship in a Scottish university as the goal of all his exertions; but his elevation to the Chair of the Gregorys, of Maclaurin, Matthew Stewart, and Playfair, probably did not enter at that period into his most sanguine anticipations.

Mr. Wallace had reached the age of fifty-one when he was appointed to the mathematical professorship in Edinburgh; but he still retained both mentally and bodily all the energy and activity of his younger years. He held the office till 1838, when he resigned on account of ill-health, having been unable to perform his duties in person during the three previous sessions. Upon his resignation the honorary title of Doctor of Laws was conferred upon him by the University, and at the same time he received a pension from Government which he enjoyed during the few remaining years of his life, in consideration, as the warrant stated, of his attainments in science and literature, and his valuable services, up to a very advanced period of life, first in the Military College, and afterwards at the University of Edinburgh.

For some years after his establishment at Edinburgh, a considerable portion of his time was occupied in the preparation of his lectures, on which he bestowed great pains. When the new edition of the *Encyclopedia Britannica* was commenced, he undertook

the revision of all the mathematical papers he had contributed, as well as some of those which had been written by Dr. Robison; and several of the more important treatises, particularly, Algebra, Conic Sections, and Fluxions, were remodelled and almost entirely re-written. To the *Transactions of the Royal Society of Edinburgh* he contributed a paper, in 1823, on the Investigation of Formulæ for finding the logarithms of trigonometrical quantities from one another; one in 1831, entitled "Account of the Invention of the Pantograph, and a Description of the Eidograph;" and one in 1839, on the Analogous Properties of Elliptic and Hyperbolic Sectors. His last contribution to that Society, published in Vol. XIV. of the *Transactions*, was entitled, "Solution of a Functional Equation, with its Application to the Parallelogram of Forces, and to Curves of Equilibration." This paper, in addition to the investigation of series adapted for calculation, contains a set of tables, to ten decimal places, of the corresponding values of the amplitude, ordinate, and arc of a catenary, which are important in an engineering point of view, as they afford the data required for constructing arches having the forms of equilibrated curves. Similar tables, to eight places, had previously been given by Mr. Davies Gilbert in a paper on the mathematical theory of suspension bridges, in the *Philosophical Transactions* for 1826; but the numbers were found by Mr. Wallace to be erroneous, generally, in the three last decimal figures.

Mr. Wallace is the author of a paper in Vol. IX. of our *Memoirs* containing two elementary solutions of Kepler's problem by the angular calculus. In the *Transactions of the Philosophical Society of Cambridge*, Vol. VI., there is also a paper by him under the title of "Geometrical Theorems and Formulæ particularly applicable to some Geodetical Problems." For this subject he had a particular predilection; and in 1838, while confined to a sick-bed, he composed, and afterwards published at his own expense, a separate work entitled, "Geometrical Theorems and Analytical Formulæ, with their Application to the Solution of certain Geodetical Problems." This volume, which he appropriately dedicated to his friend Colonel Colby, contains the substance of his paper in the *Cambridge Philosophical Transactions*, with the addition of a considerable number of extremely elegant formulæ, most of them new, and some of them important in the practice of the higher geodesy.

Professor Wallace took great delight in all the practical applications of his science, and had a strong turn for mechanical invention. His attention having been directed to the imperfections of the Pantograph, he invented, in 1821, an instrument on a different principle to supply its place, to which he gave the name of *Eidograph*. This instrument answers the same purposes as the common pantograph, to which, however, it is greatly superior, both in the extent of its applications and the accuracy of its performance; for, while the similarity of the copy to the original, in all its parts, is preserved with geometrical accuracy, the copy may be reduced or enlarged in almost any proportion; or, by a particular modifi-

cation of the instrument, it may even be reversed, and transferred immediately to metal or stone. This ingenious instrument, which would seem to be admirably adapted to the purposes of the engraver, was first described by him in Vol. XIII. of the *Edinburgh Transactions* to which reference has already been made. He has also described, in the Appendix to his *Conic Sections*, an *Elliptograph*, or instrument for describing an ellipse by continued motion, founded on a very beautiful property of the ellipse first pointed out, we believe, by him, namely, that the curve is organically described by any given point (not in the circumference) in the plane of a circle which rolls along the concave circumference of another fixed circle, the radius of which is twice that of the rolling circle. And in an Appendix to his *Geometrical Theorems* he has given the description of an instrument which he invented for the graphical solution of an important problem in surveying, viz. to determine the position of a station, having given the angles made by lines drawn from it to three other stations in the same plane, whose positions are known. This instrument, which he called a *Chorograph* (the problem which it solves having been proposed as a chorographical problem by Richard Townley in No. 69 of the *Philosophical Transactions*), is simple, compact, portable, and inexpensive; and in these respects has considerable advantages over the station-pointer, generally used for the same purpose.

Among the objects connected with the advancement of science to which Professor Wallace gave his aid, after his appointment to Edinburgh, there is one which it would be unpardonable to pass over without notice in this place,—we allude to the Observatory now established there. Ever since the time of Maclaurin there had existed a small astronomical observatory in Edinburgh, but no provision was made for regular observation, nor, indeed, did it contain any instruments fit for the purpose. Through the exertions, chiefly of Professor Playfair, funds were at length raised, by private subscription, for the erection of an observatory adapted for observations of the most accurate kind. Mr. Playfair did not live to see the building completed, or means provided for obtaining instruments, or carrying on systematic observations; but Mr. Wallace, on becoming his successor, entered fully into his views, and, in concert with a few other individuals, used all his influence and exertions towards bringing the scheme to maturity. At length, after years of expectation and delay, the Government was prevailed upon to take the observatory under its protection, furnish it with instruments of the first class, appoint an astronomer and assistant, and provide for the regular publication of the observations. In bringing about this arrangement, Mr. Wallace's aid and recommendation were of essential service; and if any thing was wanting to complete the satisfaction which he felt at the result, it was to see the observatory placed under the care of his friend Professor Henderson, of whose distinguished merits as an astronomer it would be superfluous to speak to those who are in the habit of attending our meetings, or reading our *Memoirs*.

Although the works which Mr. Wallace has left behind him assure him a high place as an original and inventive mathematician, the talents with which he was endowed by nature were, doubtless, rendered less productive than they would have been by his want of early education, his residence during the best years of his life in the country at a distance from congenial society, and, perhaps, still more from the circumstance of so much of the time which his laborious public duties left at his disposal having been consumed in the preparation of his numerous treatises for the Encyclopedias. These treatises being mostly of an elementary kind, and composed for the purpose of explaining the principles of the various branches of mathematical science, afforded little scope for originality. They possess, however, all the qualities which give value to the class of writings to which they belong; being remarkable for lucidity and precision of style, perspicuity of arrangement, elegance of demonstration, and admirable adaptation for self-instruction. The article "Conic Sections" in the last edition of the *Encyclopedia Britannica* has been translated into Russian, and used as a text-book in some of the schools for the instruction of naval Cadets in that empire. It has also been published as a separate work, and is one of the most elegant geometrical treatises on the subject in existence. Some of his other articles, besides their intrinsic value, had the accessory merit of being the first which were published in this country on the model of the French school, when the French mathematics were greatly superior to our own. His article "Fluxions," in *Brewster's Encyclopedia*, was the first systematic treatise in our language in which the differential notation was used. The date of the publication is 1815; but, as a point of history, it may be worth remarking, that this notation had been adopted several years previously, both by himself and his illustrious colleague, Mr. Ivory, in their contributions to the *Mathematical Repository;* and some instances of its use occur in an English work of much older date, Harris's *Lexicon Technicum.*

Mr. Wallace had made himself intimately acquainted with every department of mathematical knowledge, but the branch which he cultivated with the greatest affection was the ancient geometrical analysis. Of this subject he was a perfect master. His taste having been formed by the writings of Simson, Stewart, and Playfair, he had an unbounded admiration of the elegance and correctness of the Greek geometry; and he took credit to himself for having introduced the *Elements of Euclid* to the Military College, and restored them, as a class-book, to the University of Edinburgh. Another branch in which he excelled was the angular calculus, which he enriched with various new series and methods of considerable importance to the computer. All his memoirs exhibit ingenuity and fertility of invention, excellent taste, and an intimate acquaintance with those parts of analysis with which they are connected in its most improved state.

The perspicuity and methodical arrangement which distinguish his writings were equally conspicuous in his academical prelections.

An intimate acquaintance with the history of scientific discovery, and the various applications of mathematical science, joined with a thorough knowledge of the particular subject under consideration, a retentive memory, and a ready invention, rendered his lectures eminently instructive. They were delivered without the slightest attempt at ornament or effect; but they seldom failed to place the subject before the student in a strong, clear, and full light, and were animated with a genuine zeal for the progress of his pupils and the advancement of his science. His Chair had been raised to a high degree of celebrity by a long line of illustrious predecessors, and it sustained, while occupied by him, no diminution either of efficiency or reputation.

Professor Wallace was not more distinguished by his mental endowments than for his moral virtues and private worth. In every relation of life his conduct was exemplary. In his family and domestic circle he was greatly beloved. In his general intercourse with the world he was upright, sincere, and independent. In society, his habitual cheerfulness and good humour, amiable manners, benevolent disposition, and a never-failing fund of anecdote, rendered him a delightful companion and a universal favourite. Generous and liberal in all his sentiments, he entertained no envy of the discoveries of his contemporaries; no jealousy of the reputation of younger men; but was ready at all times to applaud and encourage merit, wherever, and in whatever shape, it made its appearance. For such of his pupils as manifested any remarkable capacity or application he entertained an esteem almost amounting to affection; and he was always ready to use his influence, which was considerable, in order to forward their views in life or render them any service. In every measure affecting the public good, or the scientific renown of his country, he took a warm interest. He was the means of procuring a monument to be erected in Edinburgh to Napier, the celebrated inventor of logarithms; and the last occupation of his life was to investigate the administration of some of the public charities of the city.

Mr. Wallace was one of the original non-resident Fellows of this Society. He was also a Fellow of the Royal Society of Edinburgh; a Corresponding Member of the Institution of Civil Engineers; an Honorary Member of the Cambridge Philosophical Society; and a few weeks before his death he was elected an Honorary Member of the Royal Irish Academy. After an illness which had for several years prevented him from mixing in society, he died at his residence in Edinburgh on the 28th of April, 1843, in the seventy-fifth year of his age, respected by all, and sincerely regretted by a wide circle of personal friends.

The Fellows have been already informed of the resignation of Mr. John Hartnup, the Assistant Secretary to this Society, in consequence of his having been appointed Superintendent of an Astronomical Observatory recently established at Liverpool; for which situation Mr. Hartnup was well qualified, not only from his

former pursuits in a similar situation, but also from those habits of accuracy and that zeal for the science which he has always shewn. But, although the Council must at all times lament the loss of an active and intelligent officer, they congratulate the Society on having obtained a successor in Mr. Richard Harris, whose able assistance, on various occasions, at the Royal Observatory at Greenwich, has been highly spoken of by the Astronomer Royal, and augurs well for the benefit and advantage which the Society is likely to derive from his cordial co-operation.

The Fellows are probably aware that an Act of Parliament was passed in the last session, exempting certain Societies from any county, borough, parochial, or other local rates on the premises occupied by them for the purpose of science, literature, or the fine arts; provided, however, that a certificate of exemption be obtained and verified in the manner specified in such act. The requisite certificate for the present apartments of this Society has been obtained, and regularly registered; so that the Society is now exempt from the rates above alluded to, which they have hitherto been obliged to pay.

The Council have to regret that they have not yet been able to procure the Apartments on the basement story of the building, which they have so long been expecting; although there is no doubt that the rooms are at this moment wholly unoccupied. The President of the Society, as far back as the month of July last, addressed the Treasury on the subject; but at present he has not received any reply.

It is well known to most of the Fellows that the Council have, from time to time, proposed certain alterations in the Rules, or Bye-laws, of the Society, which have been regularly approved and sanctioned at the annual general meetings. A new edition of the Bye-laws being now required, it has been considered expedient to embrace the opportunity not only of embodying these alterations amongst the general sections and articles, but also of inserting a few additional alterations, in order to preserve a greater uniformity in the general wording and spirit of the Bye-laws. These additional alterations will be submitted to you for your consideration, and in case of your approval, will, with those previously sanctioned, be incorporated in their respective places, and thus become an integral portion of the general Bye-laws.

In the last annual Report, the Council stated that they had considered it advisable to alter the numerical typography, that had been so long in general use, by a return to the adoption of the old method of forming the Arabic figures, which had been so long laid aside. That measure has now been fully carried into execution by the Society, and the whole of the figures in the ensuing volume of the *Memoirs* will be formed in the manner suggested in that Report. The whole of the figures also employed in printing the three large catalogues of stars, now in the press, will consist of this new type; and it is hoped that these specimens of distinctness and legibility will soon come into more general use with the public, and ultimately tend to drive out the uncouth and scarcely legible

figures that have so long encumbered and deformed our numerical tables.

Since the last annual Report, the Council have had the gratification of accepting, on the part of the Society, and incorporating with the *Memoirs*, Mr. Baily's volume of Catalogues, containing the labours of Ptolemy, Ulugh Beigh, Tycho Brahé, and Hevelius, in that department of astronomy. This volume, as the Fellows are aware, is entirely the work of Mr. Baily, and is printed at his expense. The Council, in announcing this new obligation of the Society to Mr. Baily, feel that they only just need to remind the meeting, that the munificence of the present, in a pecuniary point of view, gratefully as it should be acknowledged, is not the point to which our acknowledgments should be most specially directed. Though the saving of expense has certainly prevented an unusual pressure on the Society's funds (for the Council would have felt bound to publish so valuable a communication, presented in the ordinary way), yet the state of the accounts which you have heard read to day, shews that the pressure would not have been unbearable. But the combination of knowledge and industry necessary to face the formidable task of collating, revising, and annotating, this collection of catalogues, with perfect unity of purpose and plan, it is not in the power of any collective body to command: had it been so, this useful labour would not have remained unperformed so long, notorious as was the difficulty, not only of consulting, but even of procuring, the catalogues in question. Nor must we forget, in connexion with this work, the edition of Flamsteed's catalogue which appeared a few years ago, in the life of that astronomer by Mr. Baily, who has thus given new access to the contents, new life to the history, new correctness to the matter, of all the most celebrated star-catalogues, from the earliest epoch of systematically recorded observation to the time when instrumental methods and corrections began to assume their present form. To this we must add that he has imposed new duties upon those who write and speak about the history of astronomy; errors and misconceptions inevitable in those who could only procure accounts of several of these catalogues at second-hand, are from this time unpardonable.

During the past year, nearly the whole of the terrestrial globe (embracing the several continents of Europe, Asia, Africa, and America) has been either gratified or alarmed at the appearance of one of the most splendid and extraordinary comets that have ever yet been placed on record. This comet does not seem to have been noticed prior to the time of its perihelion passage (February 27), but on the following day it was, in some places, seen nearly from the time of sun-rise to sun-set, and even at mid-day with the naked eye: a circumstance which affords the strongest proof of its great splendour. For many subsequent days it was the object of universal attention and admiration; and the numerous accounts of its appearance and the various observations and remarks thereupon, which have been received from all parts of the world, have

already been printed in the *Monthly Notices* of the Society. It seems to have excited much consternation in some places, but was universally remarked for its splendour, its velocity, and the great length of its tail, during the whole time of its visible existence, but more especially about the time of its first appearance.

Another comet, but not visible to the naked eye, has also recently made its appearance, and was first discovered by M. Faye at the Royal Observatory at Paris. Although this comet is far inferior in splendour to the one just mentioned, it is in another respect more interesting to the astronomer, inasmuch as it appears to be one that performs its revolution in little more than six years; thus adding another of those remarkable bodies whose periodical returns may ultimately tend to throw some light on the wonderful system of the universe.

In the annual Report of the Council in 1838, it was stated that a Committee had been appointed by the British Association to wait on the Government for the purpose of obtaining means to procure the reduction of all the lunar observations made at the Royal Observatory at Greenwich. That application was made and cheerfully responded to by the Government; and the funds adequate for this purpose were placed in the hands of the Astronomer Royal, by whose active superintendence and control this important and laborious operation has been at length brought to a close. The results of these computations are now almost ready for the press, and the public will soon be gratified by the publication of a body of information that must tend to throw considerable light on the elements of the lunar theory, and thus exhibit one of the most splendid proofs of the utility and advantage of this national establishment.

Connected with the same subject, and emanating in some measure therefrom, the Council are pleased in being able to announce that the Government has also complied with the request of the Astronomer Royal, to construct another building, attached to the Royal Observatory, for the erection of an altitude and azimuth instrument, intended for the sole purpose of making a greater and a more regular number of observations of the moon in various parts of her orbit; in order that all the practical means might be afforded for obtaining a more perfect knowledge of the lunar theory. The instrument here proposed is in some measure novel in its construction, and has been suggested by the Astronomer Royal, who anticipates certain advantages that are unattainable, or scarcely to be expected, in instruments of the usual form and construction. By means of this new instrument it is proposed that on every day of the year, when the state of the atmosphere will permit, the moon shall be observed at convenient hours, and in every suitable position, according to a plan suggested by the Astronomer Royal for securing the most important results.

Titles of Papers read before the Society, between February 1843 and February 1844.

1843.

Mar. 10. Occultations observed at Port Royal Dockyard, Jamaica. By Capt. Alexander Milne, H.M.S. Crocodile. Communicated by the Rev. George Fisher.

Observations of the Beginning and End of the Solar Eclipse on the 8th of July, 1842, in the Fort on the left bank of the Shanghai River, near the town of Woosung, on the Coast of China. By Capt. Sir Everard Home, Bart. Communicated by the Rev. George Fisher.

Translation of a Letter from M. Hansen to R. W. Rothman, Esq., accompanying a copy of a printed paper on the Perturbations of the Heavenly Bodies moving in very Eccentric and very Inclined Orbits.

On the Application of the Method of Least Squares to the Determination of the most probable Errors of Observation in a portion of the Ordnance Survey of England. By Thomas Galloway, Esq. A.M. F.R.S., one of the Secretaries of the Society.

A communication received by the President from the Rev. Baden Powell, on an easy and convenient Method of Imitating the Corona, or Glory, that surrounds the body of the Moon, during the time of total darkness, in Total Eclipses of the Sun.

April 12. Extract of a Letter from M. Bessel to Professor Henderson, dated November 14, 1842. Communicated by Professor Henderson.

Letter from Professor Henderson to the Secretary, dated March 23, 1843, on the great Comet of 1843.

Elements of the great Comet of 1843, with an Ephemeris, from the Observations of March 20, 22, and 25, reported in Professor Schumacher's Circular. By Professor Henderson.

Letter from Lieut. G. B. G. Downes, R.E. to Professor Henderson. Communicated by Professor Henderson.

Letter from Professor Henderson to the Secretary, on the great Comet of 1843.

Letter from T. Forster, Esq., dated Bruges, March 22, 1843, on the great Comet.

Second Letter from T. Forster, Esq., dated Bruges, March 28, 1843, on the great Comet.

Letter from J. Nasymth, Esq. to Sir J. F. W. Herschel, Bart., on an early Observation of the Train of the great Comet. Communicated by Sir J. F. W. Herschel, Bart.

Letter from M. C. L. Littrow, Director of the Observatory of Vienna, on the great Comet. Communicated by T. Galloway, Esq.

Two Circular Letters from Professor Schumacher, dated March 26 and March 31, 1843, on the great Comet.

Notices of the Comet from the Islands of St. Vincent's and St. Christopher's.

May 12. A Memoir on Astronomical Drawing. By Charles Piazzi Smyth, Esq. Communicated by Capt. W. H. Smyth, R.N.

On a Revision of the Boundaries of the Constellations, as usually drawn on Celestial Maps and Globes. By F. Baily, Esq., President of the Society.

Account of an Observation of the Solar Eclipse of the 7th of July, 1843, made at Starfield Observatory, together with an Account of some Chronometrical Experiments made to determine the Longitude of that Observatory. By W. Lassell, Esq.

Professor Schumacher's third, fourth, and fifth Circulars on the great Comet of 1843.

Circular Letter from Professor Schumacher on a Telescopic Comet discovered by M. Mauvais on May 3, 1843.

June 9. On a Self-acting Dividing Engine. By William Simms, Esq.

Recomputation of Roy's Triangulation for connecting the Observatories of Greenwich and Paris. By W. Galbraith, Esq.

Occultations of Fixed Stars and the Planet *Jupiter* by the Moon. Observed at Hamburgh by C. Rumker, Esq.

Notes on the Appearance of the great Comet of 1843, made during a Voyage from the Cape of Good Hope to England. By M. Close, Esq., Commander of the Ship Ellenborough.

A Letter from John Belam, Esq., Master of H. M. Sloop Albatross, on the great Comet of 1843. Communicated by G. B. Airy, Esq., Astronomer Royal.

Observations of the Comet by S. C. Walker, Esq. and Professor Kendall, at the Observatory of the High School at Philadelphia. Communicated by Lieut.-Col. Sabine.

Notes on the Comet, accompanied by a Pencil Sketch. By Capt. Hopkins, commanding the East India Company's Ship Seringapatam, on a voyage from the Cape of Good Hope. Communicated by Sir J. F. W. Herschel, Bart.

Extract of a Letter on the great Comet from Lieut. D. W. Tyler, R.E., dated St. Kitts, March 6, 1843.

Letter from J. T. Austin, Esq., dated Funchal, Madeira, April 8, 1843, accompanying a Sketch of the Comet. Communicated by Sir J. F. W. Herschel, Bart.

Notes on the Comet, as seen by M. Montojo, at San Fernando. Communicated by Sir J. F. W. Herschel, Bart.

Account of the Comet, as seen on board the Childe Harold on her voyage from Bombay to London. By Lieut. W. S. Jacob, Bombay Engineers.

Letter from T. Forster, Esq., on the Comet, dated Bruges, April 22, 1843.

Account of the Comet, as seen on board the Ship Malabar, on her passage from the Cape of Good Hope. By R. Pollock, Esq. Commander.

Letter on the Great Comet from H. A. Cowper, Esq. H. M. Consul at Pernambuco in Brasil, dated March 9, 1843.

Observations of the Great Comet, made at the Royal Observatory, Cape of Good Hope, by Charles Piazzi Smyth, Esq. Communicated by Sir J. F. W. Herschel, Bart.

Abstract, by the Secretary, of Newspaper Accounts of the Great Comet, which have been forwarded to the Society.

Observations of the Comet, made at the Observatory of Trevandrum, accompanied by a Drawing. By J. Caldecott, Esq. Director of the Observatory.

Letter from Professor Kendall, containing Observations of the Comet, made at Philadelphia. Communicated by Lieut.-Col. Sabine.

Observations of Distance of the Comet from known Stars, made at Demerara. By Captain Geale, of the Ship Isabella, Lieut. A. S. Glascott, R.N. and J. Donald, Esq. Communicated by Sir J. F. W. Herschel, Bart.

Some Account of the Comet in a Letter from J. Gimblett, Esq. Communicated by Sir. J. F. W. Herschel, Bart.

Extract of a Letter from Lieut.-Col. Harvey, 14th Light Dragoons, dated Poona, March 13. Communicated by Professor Narrien.

Nov. 10. Description of a small Observatory, constructed at Poona in 1842, accompanied by Observations of Eclipses, &c., of *Jupiter's* Satellites. By Lieut. W. S. Jacob, Bombay Engineers.

Letter respecting the Great Comet, from S. C. Walker, Esq., dated Philadelphia, May 23, 1843. Communicated by Sir J. F. W. Herschel, Bart.

Observations of the Great Comet. By Captain Tucker, R.N. Communicated by the Lords Commissioners of the Admiralty.

Observations of the Comet made at Auckland, New Zealand, accompanied by a Map of its progress

amongst the Stars. By John Collyer Haile, Esq. Communicated by G. B. Airy, Esq. Astronomer Royal.

Notes on the Comet, extracted from the Journal of Capt. G. Rodney Mundy, R.N. Commander of Her Majesty's Ship Iris. Communicated by G. B. Airy, Esq.

Extracts from a Daily Journal of Remarks and Observations on the Comet, as seen at Van Dieman's Land. By Lieut. Kay, R.N. Communicated by Lieut.-Col. Sabine.

Extract of a Letter from A. Abbott, Esq., containing Remarks on the Comet, as seen at Madeira, accompanied by Two Drawings. Communicated by Sir J. F. W. Herschel, Bart.

Observations of the Comet. By Captain P. P. King, R.N., made at Port Stephens, New South Wales. Communicated by Captain Beaufort, R.N.

Abstract of an Article on the Comet in *Le Cernéen*, a Newspaper, published at Port Louis, Mauritius, March 14, 1843. Communicated by G. B. Airy, Esq.

An Account of the Comet, extracted from the *Colonial Observer*, of March 8, 1843, published at Sydney, New South Wales. Communicated by F. Baily, Esq.

Copy of a Letter, addressed to the Editor of the *New Zealand Colonist*. By Captain W. M. Smith, R.A.; and Extracts from Three other Letters from New Zealand, containing Accounts of the Comet. Communicated by F. Baily, Esq.

Observations of the Comet, as seen at Sea off the Island of Timor. By J. A. Murray, Esq. Communicated by J. B. Airy, Esq.

Pen-drawings of the appearance of the Comet. By Mrs. Grant. Communicated by Sir J. F. W. Herschel, Bart.

A Letter from R. H. Williams, Esq., containing an Extract from Notes on the Comet, made at the Observatory of Batavia. Communicated by G. B. Airy, Esq.

Remarks on the Comet, as seen at Galveston, Texas. By W. Bollaert, Esq. Communicated by F. Baily, Esq.

Letter from the Rev. W. S. Mackay to Sir J. F. W. Herschel, dated Calcutta, June 10, 1843, on the appearance of the Comet, and the variability of the Star η *Argûs*. Communicated by Sir J. F. W. Herschel, Bart.

Observations of the Comet made at the Mauritius, in March, 1843. By W. Lloyd, Esq.

Occultations observed at Ashurst in the year, 1843. By R. Snow, Esq.

Right Ascensions and Declinations of the Comet of Mauvais, observed at Hamburg. By C. Rumker, Esq.

Communicated in a Letter to F. Baily, Esq., dated July 25, 1843; and a Letter to Dr. Lee, dated August 18, 1843.

On the Divisions of the Exterior Ring of the Planet *Saturn*. By the Rev. W. R. Dawes.

Dec. 8. On the Apparent Magnitudes of the Fixed Stars. By Charles Piazzi Smyth, Esq. Communicated by Capt. W. H. Smyth, R.N.

Description of an Astronomical Time Watchcase. By the Rev. Professor Chevallier.

Mean Places, for Jan. 1, 1842, of Fifty Telescopic Stars, within Two Degrees North Polar Distance, observed in the years 1842 and 1843, at Markree, in the County of Sligo. By E. J. Cooper, Esq., and A. Graham, Esq.

On the Orbits of several Ancient Comets. By J. R. Hind, Esq. of the Royal Observatory, Greenwich. Communicated by the Rev. R. Main.

Approximate Elements of the Orbit of the Comet, discovered by M. Faye. By Professor Henderson.

Two Circular Letters from Professor Schumacher on the Comet, discovered by M. Faye. Communicated by F. Baily, Esq.

Results of Observations made with a Sextant and a Pocket Chronometer, for determining the Latitude and Longitude of the Apartments of the Society. By J. Hartnup, Esq. Communicated by Captain W. H. Smyth, R.N.

1844.

Jan. 12. On the Advantages of employing Large Specula and Elevated Situations for Astronomical Observations. By C. Piazzi Smyth, Esq. Communicated by Captain W. H. Smyth, R.N.

Observations of the Planet *Uranus*, made in the year 1843. By C. Rumker, Esq. Communicated by Dr. Lee.

Letter from Professor Schumacher to F. Baily, Esq., dated January 5, 1844, inclosing the Elements of the New Comet, computed by Dr. Goldschmidt.

On the Orbit of the Comet of Faye. By Professor Henderson.

Letter from Professor Henderson, announcing an additional Observation of the Comet of Faye.

Elements of the Comet of Faye, computed by J. C. Adams, Esq. of St. John's College, Cambridge. Communicated by Professor Challis.

Observations of the Comet of Faye. By C. Rumker, Esq. Communicated by Dr. Lee.

Observations of the Comet of Faye, made at Starfield. By W. Lassell, Esq.

Observations of the Great Comet of 1843, made by J.

Burdwood, Esq. Master of Her Majesty's Sloop Persian. Communicated by G. B. Airy, Esq.

Remarks on the Great Comet, as seen on board the Lawrence of Liverpool, on her passage from Sydney to Conception. By a Passenger. Communicated by W. Simms, Esq.

Abstract of an Article in *Silliman's Journal*, containing an Account of Observations of the Great Comet, made near the time of its Perihelion Passage. By J. G. Clarke, Esq. of Portland.

On the Deducing of the Parallax of *Mars*, and hence that of the Sun, from the Geocentric Motion of the former when in Opposition, and especially when near the Node of his Orbit. By S. M. Drach, Esq.

A Letter from Sir J. F. W. Herschel, Bart. to F. Baily, Esq., dated September 6, 1842, on the Increase in Magnitude of the Star η *Cygni*.

List of Public Institutions and of Persons who have contributed to the Society's Library, &c. since the last Anniversary.

Her Majesty's Government.
Royal Society of London.
L'Académie Royale des Sciences de l'Institut de France.
Bureau des Longitudes.
British Association.
Royal Academy of Munich.
Royal Irish Academy.
Italian Society.
Imperial Academy of St. Petersburg.
American Philosophical Society.
Royal Society of Göttingen.
Royal Academy of Lisbon.
Royal Academy of Brussels.
Royal Academy of Berlin.
L'Administration Imperial des Mines de Russie.
Royal Society of Edinburgh.
Royal Geographical Society.
Royal Asiatic Society.
Geological Society of London.
Zoological Society of London.
Linnean Society of London.
Society of Arts.
Institution of Civil Engineers.
United Service Institution.
Yorkshire Philosophical Society.
Manchester Philosophical Society.

The Observatory at San Fernando.
The Observatory at Milan.
The Observatory at Dorpat.
The Radcliffe Trustees.
The Editor of the Athenæum Journal.
The Editor of the Quarterly Journal of Meteorology.
The Editors of the London Physiological Journal.

G. B. Airy, Esq. *Ast. Roy.*
M. Bachelier.
F. Baily, Esq.
M. E. Biot.
M. J. B. Biot.
A. Booth, Esq.
Professor Challis.
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M. Slavinsky.
R. Snow, Esq.
Lieut. W. S. Stratford.
Professor Struve.
R. Taylor, Esq.
W. Vaughan, Esq.
Colonel Visconti.

At the conclusion of the reading of the Report of the Council, Mr. Galloway brought forward, for the approval of the meeting, sundry alterations, chiefly verbal, in certain of the Bye-laws of the Society, which the Council thought expedient to be made, previously to the reprint of the same, which is now necessary. All the alterations, as explained by Mr. Galloway, were unanimously agreed to.

The Meeting then proceeded to the Election of the Council for the ensuing Year, when the following Fellows were elected, viz.

President: Francis Baily, Esq. F.R.S. — *Vice-Presidents:* George Biddell Airy, Esq. M.A. F.R.S. *Astronomer Royal;* Augustus De Morgan, Esq.; Rev. Richard Sheepshanks, M.A. F.R.S.; The Right Hon. Lord Wrottesley, M.A. F.R.S. — *Treasurer:* George Bishop, Esq.—*Secretaries:* Thomas Galloway, Esq. M.A. F.R.S.; Rev. Robert Main, M.A. — *Foreign Secretary:* Captain W. H. Smyth, R.N. K.S.F. D.C.L. F.R.S. — *Council:*

Samuel H. Christie, Esq. M.A. F.R.S.; George Dollond, Esq. F.R.S.; Bryan Donkin, Esq. F.R.S.; Rev. George Fisher, M.A. F.R.S.; John Lee, Esq. LL.D. F.R.S.; Edward Riddle, Esq.; Captain James Clark Ross, R.N. F.R.S.; William Rutherford, Esq.; Lieut.-Colonel Edward Sabine, F.R.S.; Lieutenant William S. Stratford, R.N. F.R.S.

Thaddeus Foley, Esq. Mathematical Master, Royal Naval School, Camberwell, was balloted for, and duly elected a Fellow of the Society.

London :—Printed by Moyes and Barclay, Castle Street, Leicester Square.